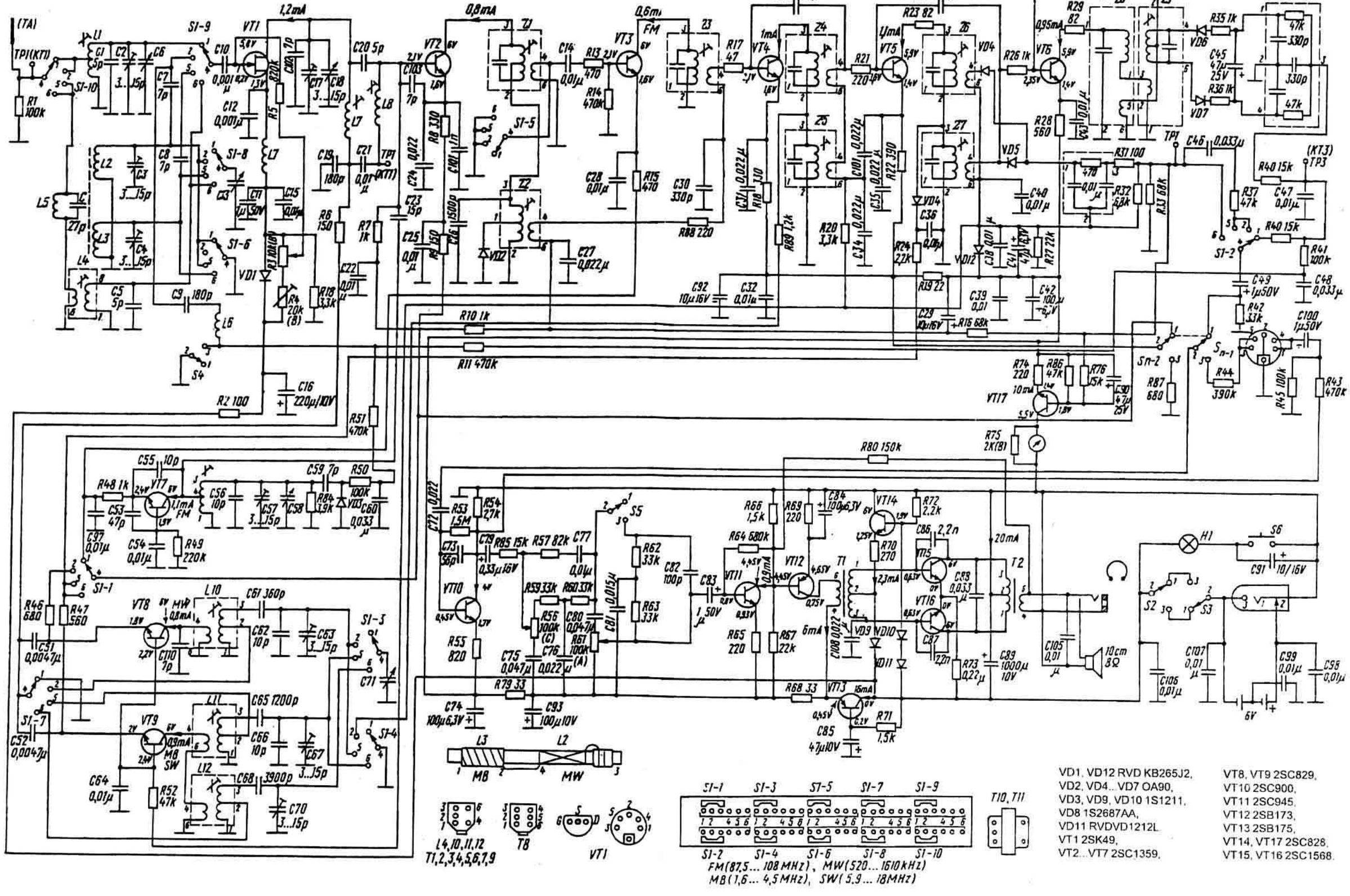


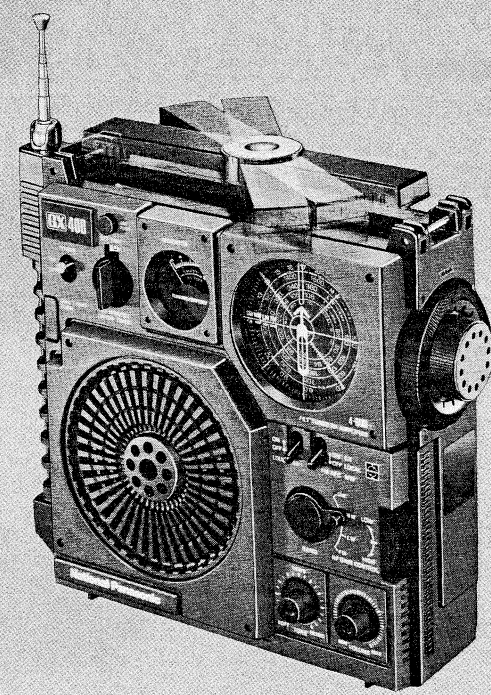

VD1, VD12 RVD KB265J2,
VD2, VD4...VD7 OA90,
VD3, VD9, VD10 1S1211,
VD8 1S2687AA,
VD11 RVDVD1212L.
VT1 2SK49,
VT2...VT7 2SC1359,

VT8, VT9 2SC829,
VT10 2SC900,
VT11 2SC945,
VT12 2SB173,
VT13 2SB175,
VT14, VT17 2SC828,
VT15, VT16 2SC1568.

ORDER NO. RD7410-1118

# Service Manual

National
RADIO
Panasonic



AC ADAPTOR.....RD-9480B

## FM/AM 4-BAND PORTABLE RADIO

## MODEL RF-966LB

### ■ SPECIFICATIONS

| | |
|---|---|
| Frequency Range: | FM 87.5～108 MHz<br>MW 520～1610 kHz (577～186m)<br>LW 145～400 kHz (2050～760m)<br>SW 5.9～18 MHz (50.8～16.7m) |
| Intermediate Frequency: | FM 10.7 MHz<br>AM (MW, LW & SW) 455 kHz |
| Sensitivity: | FM 2μV for 50 mW Output<br>MW 20μV/m for 50 mW Output<br>LW 100μV/m for 50 mW Output<br>SW 3μV for 50 mW Output |
| Power Output: | 3.3W Maximum |
| Power Source: | Battery:<br>6V (Four "C" Size Flashlight Batteries)<br>(National UM-2 or equivalent)<br>AC (Using AC Adaptor RD-9480B)<br>50-60 Hz, 110～125V/220～240V |
| Speaker: | 10 cm (4") PM Dynamic Speaker |
| Dimensions: | 235(Wide) × 213(High) × 78(Deep) mm<br>($9\frac{1}{4}$" × $8\frac{3}{8}$" × $3\frac{1}{16}$") |
| Weight: | 1.65 kg. (3 lb. 10.2 oz.) without batteries |
| Impedance: | Speaker.....8Ω<br>Earphone Jack.....8Ω<br>Din Jack<br>Phono .....500kΩ<br>REC OUT .....80kΩ |

Specification are subject to change without notice for further improvement.

Matsushita Electric Industrial Co.,Ltd.
MATSUSHITA ELECTRIC TRADING CO., LTD.
P.O. Box 288 Central, Osaka, Japan

## TO REMOVE CABINET COVER

1. Remove volume, tone and band selector knobs from cabinet.
   (Attach cord to the knob and pull it out forward.)
2. Remove battery cover.
3. Remove four (4) cabinet cover screws, nos. 1~4, as illustrated in fig. 1.
4. Remove cabinet back cover.
5. Unsolder leadwire from speaker yoke.
6. Set power switch to ON position.
7. Remove cabinet front cover.
8. Pull out socket from speaker terminals.
9. To reassemble, reverse the above procedure.

## TO REMOVE DIAL DRIVE ASSEMBLY

1. Remove cabinet cover. (Refer to cabinet cover removal instructions.)
2. Remove rubber ($CA_{53}$), in illustrated in fig. 2.
3. Remove dial drum screw, in illustrated in fig. 3.
4. Remove tuning knob.
5. Remove dial drive assembly screw, no. 2, as illustrated in fig. 6.
6. Remove two (2) dial drive assembly screws, nos. 1 & 2, as illustrated in fig. 7.
7. Remove dial drive assembly.
8. Remove dial scale and back plate screw, no. 1, as illustrated in fig. 6.
9. To reassemble, reverse the above procedure and read the following notes.

   Notes:

   1. When mounting dial drive assembly, turn tuning gang shaft to fully counter-clockwise and tuning shaft to fully clockwise, then insert dial drum ($CH_6$) to tuning gang shaft.
   2. When mounting dial scale, turn tuning shaft to fully clockwise, then set start points as illustrated in fig. 10.

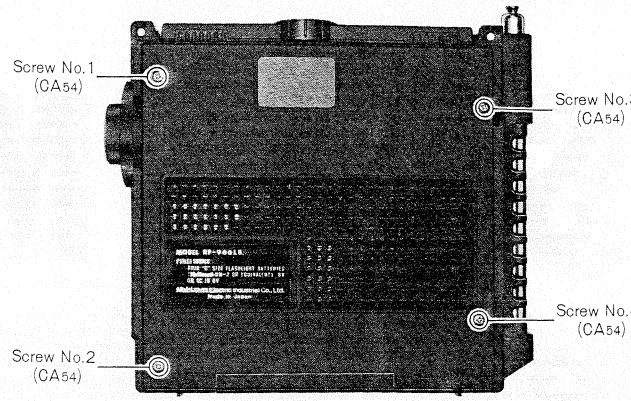



Fig. 1

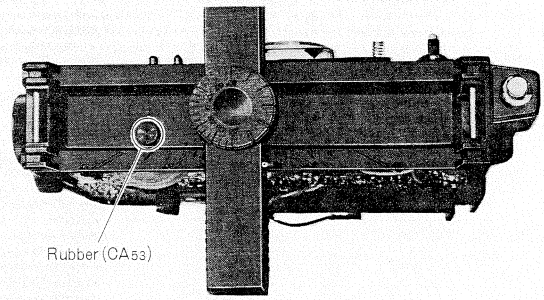



Fig. 2

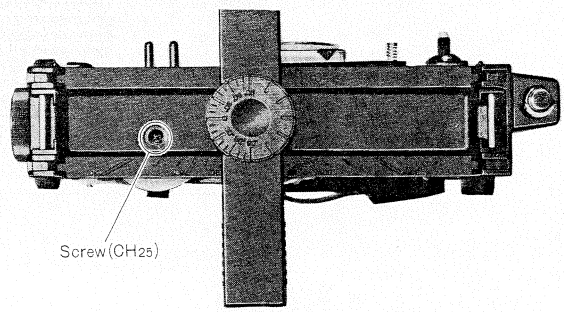



Fig. 3

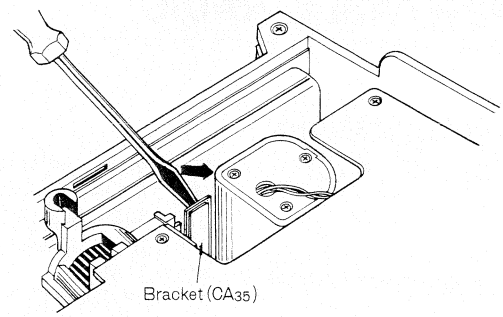



Fig. 4

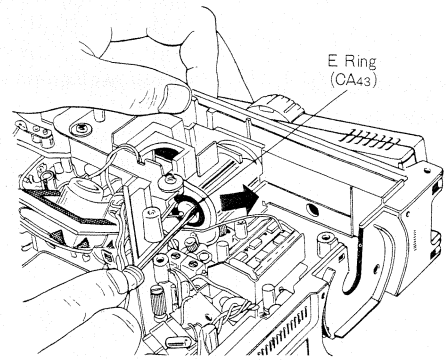



Fig. 5

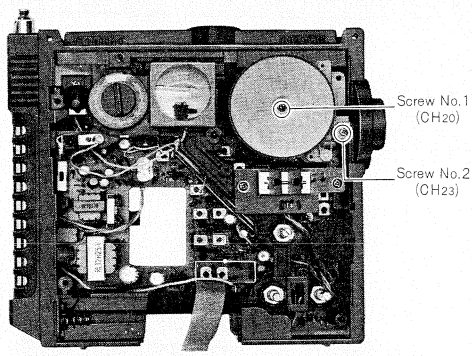



Fig. 6

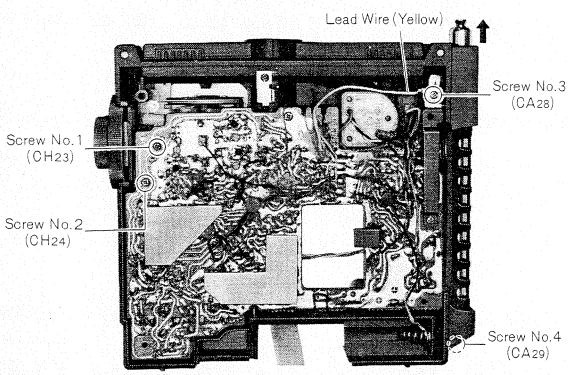



Fig. 7

## ■ TO REMOVE GYRO ANTENNA CASE

1. Remove cabinet cover. (Refer to cabinet cover removal instructions.)
2. Unsolder four (4) lead wires between core antenna and PC board at PC board side.
3. Remove dial scale and back plate.
4. Remove meter.
5. Remove bracket ($CA_{35}$) by driver as illustrated in fig. 4.
6. Remove E ring by driver as illustrated in fig. 5.
7. Remove gyro antenna case.
8. To reassemble, reverse the above procedure.

## ■ TO REMOVE CORE ANTENNA

1. Push the antenna pop-up button.
2. Remove gyro antenna case cover by driver as illustrated in fig. 9.
3. Unsolder three (3) lead wires from PC board.
4. To reassemble, reverse the above procedure and read the following note.

Note: When mounting core antenna to antenna case, wiring three (3) lead wires as illustrated in fig. 8.

## ■ TO REMOVE WHIP ANTENNA

1. Unsolder lead wire to whip antenna terminal, as illustrated in fig. 7.
2. Remove two (2) whip antenna case screws, nos. 3 & 4, as illustrated in fig. 7.
3. Pull out whip antenna in the direction of arrow, as illustrated in fig. 7.
4. Remove whip antenna from whip antenna case.
5. To reassemble, reverse the above procedure.

## ■ DIAL CORD INSTALLATION GUIDE

1. Remove dial drive assembly from chassis. (Refer to dial drive assembly removal instructions.)
2. Dial cord length is 90 cm ($35\frac{7}{16}$").
3. Set each drum at the position, as illustrated in fig. 11.
4. Arrows (1～10) indicate correct order and direction of dial cord installation, as illustrated in fig. 11.
5. Cement dial cord ends.

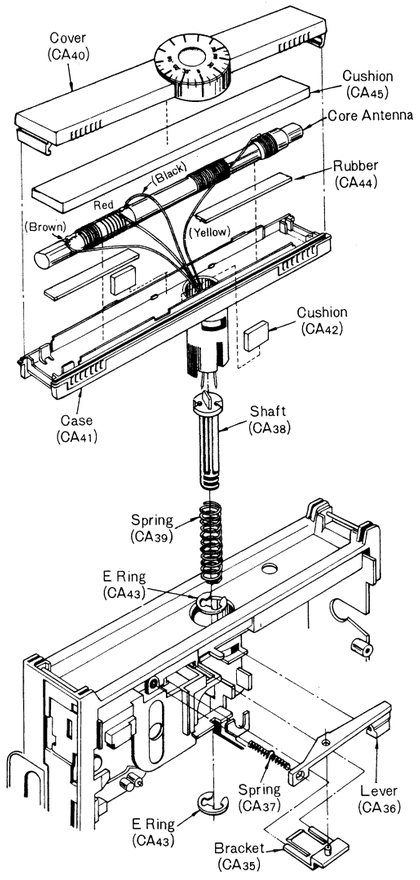



Fig. 8

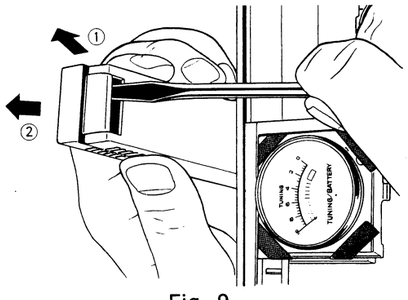



Fig. 9.

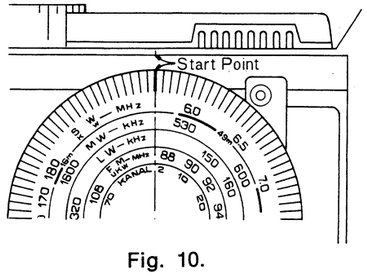



Fig. 10.

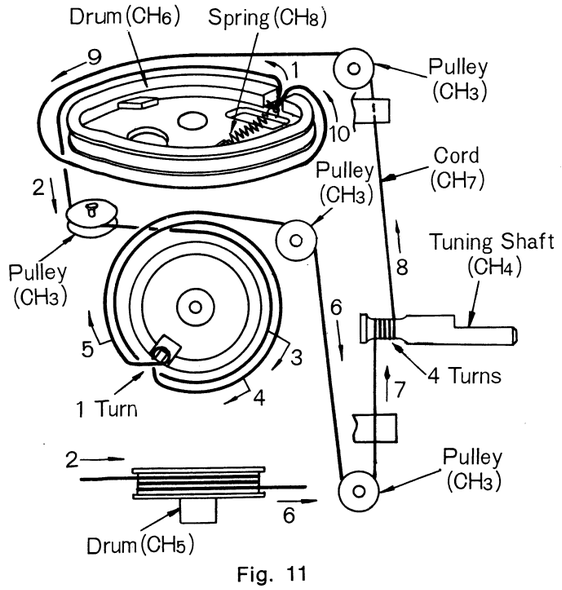
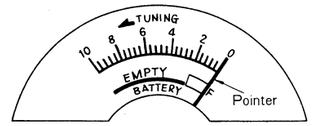



Fig. 11



## ■ TUNING/BATTERY/REC LEVEL METER ADJUSTMENT

1. RADIO RECEIVER SETTING
   - Set RADIO-PHONO selector switch to RADIO.
   - Set band selector switch to FM.
   - Set volume control to minimum.
   - Set power source voltage to 6 volts DC.
   - Set power switch to ON.
2. REMARKS
   Adjust $R_{75}$ so that the pointer of level meter stays as shown in figure right.



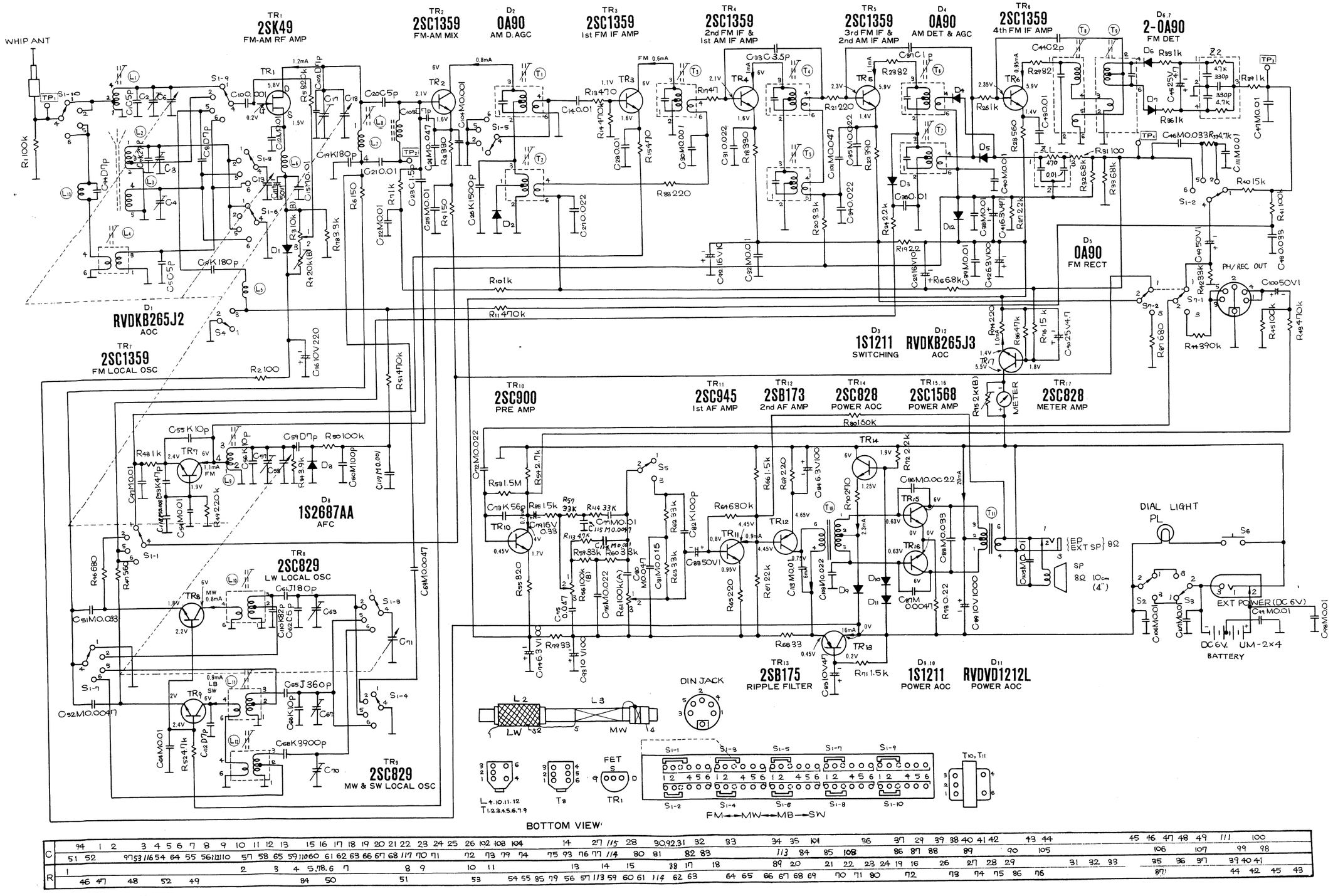

## ■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

**Notes:**
1. Set volume control to maximum.
2. Set tone control to Mumic.
3. Set band selector switch to MW, LW, SW or FM.
4. Set RF gain control to high.
5. Set loudness switch to OFF.
6. Set power switch to ON.
7. Set power source voltage to 6 volts DC.
8. Set RADIO-PHONO selector switch to RADIO.
9. Set AFC/DX-LOCAL switch to ON/DX.

| | SIGNAL GENERATOR or SWEEP GENERATOR | | RADIO DIAL SETTING (DISTANCE) | INDICATOR (VTVM or SCOPE) | ADJUSTMENT | REMARKS |
|---|---|---|---|---|---|---|
| | CONNECTIONS | FREQUENCY | | | | |
| | **MW ALIGNMENT** | | | | | |
| (1) | Fashion loop of several turns of wire and radiate signal into loop of receiver. | 455 kHz 30% Mod. with 400 Hz. | Point of non-interference. (on/about 600 kHz) | Output meter across earphone jack. | $T_2$ (1st IFT)<br>$T_5$ (2nd IFT)<br>$T_6$ (3rd IFT) | Adjust for maximum output. |
| (2) | 〃 | 550 kHz | 550 kHz (Fig. 13) | 〃 | $L_{11}$ (OSC Coil)<br>(＊1)$L_3$ (ANT Coil) | Adjust for maximum output. Adjust $L_3$ by moving coil bobbin along ferrite core. |
| (3) | 〃 | 1500 kHz | 1500 kHz (Fig. 14) | 〃 | $C_{67}$ (OSC Trimmer)<br>$C_4$ (ANT Trimmer) | Adjust for maximum output. Repeat steps (2) and (3). |
| | **LW ALIGNMENT** | | | | | |
| (4) | 〃 | 145 kHz | 145 kHz (Fig. 15) | 〃 | $L_{10}$ (OSC Coil)<br>(＊1)$L_2$ (ANT Coil) | Adjust for maximum output. Adjust $L_2$ by moving coil bobbin along ferrite core. |
| (5) | 〃 | 325 kHz | 325 kHz (Fig. 16) | 〃 | $C_{70}$ (OSC Trimmer)<br>$C_3$ (ANT Trimmer) | Adjust for maximum output. Repeat steps (4) and (5). |
| | (＊1) Cement antenna bobbin with wax after completing alignment. | | | | | |
| | **SW ALIGNMENT** | | | | | |
| (6) | Connect to test point TP1 through 10 PF capacitor. Common to chassis. | 5.9 MHz | 5.9 MHz (Fig. 17) | 〃 | $L_{12}$ (OSC Coil)<br>$L_4$ (ANT Coil) | Adjust for maximum output. |
| (7) | 〃 | 18 MHz | 18 MHz (Fig. 18) | 〃 | $C_{63}$ (OSC Trimmer) | Adjust for maximum output. Repeat steps (6) and (7). |
| | **FM-IF ALIGNMENT** | | | | | |
| (8) | High side thru. 0.001 μF to point TP2, Common to chassis. | 10.7 MHz (400 kHz SWP.) | Point of non-interference. (on/about 90 MHz). | Connect vert. amp. of scope to point TP3, Common to chassis. | $T_1$ (FM 1st IFT)<br>$T_3$ (FM 2nd IFT)<br>$T_4$ (FM 3rd IFT)<br>$T_7$ (FM 4th IFT)<br>$T_8$ (FM 5th IFT) (Primary) | Adjust for maximum amplitude and proper linearity between ±100 kHz markers. (Refer to fig. 21) |
| (9) | 〃 | 〃 | 〃 | 〃 | $T_9$ (FM 5th IFT) (Secondary) | Adjust $T_9$ so that 10.7 MHz marker appears at the center. (Refer to fig. 22) |
| | **FM-RF ALIGNMENT** | | | | | |
| (10) | Connect to test point TP1 through FM dummy antenna. (Refer to fig. 23.) | 87.2 MHz | Minimum Frequency. | Output meter across earphone jack. | $L_9$ (FM OSC Coil) | (＊2) Adjust for maximum output. |
| (11) | 〃 | 90 MHz | 90 MHz (Fig. 19) | 〃 | $L_7$ (FM DET Coil)<br>$L_1$ (AM ANT Coil) | (＊2) Adjust for maximum output. |
| (12) | 〃 | 106 MHz | 106 MHz (Fig. 20) | 〃 | $C_{57}$ (FM OSC Trimmer)<br>$C_{17}$ (FM DET Trimmer)<br>$C_2$ (FM ANT Trimmer) | (＊2) Adjust for maximum output. Repeat steps (10)～(12). |
| | (＊2) Three output responses will be present; proper tuning is the center frequency. | | | | | |

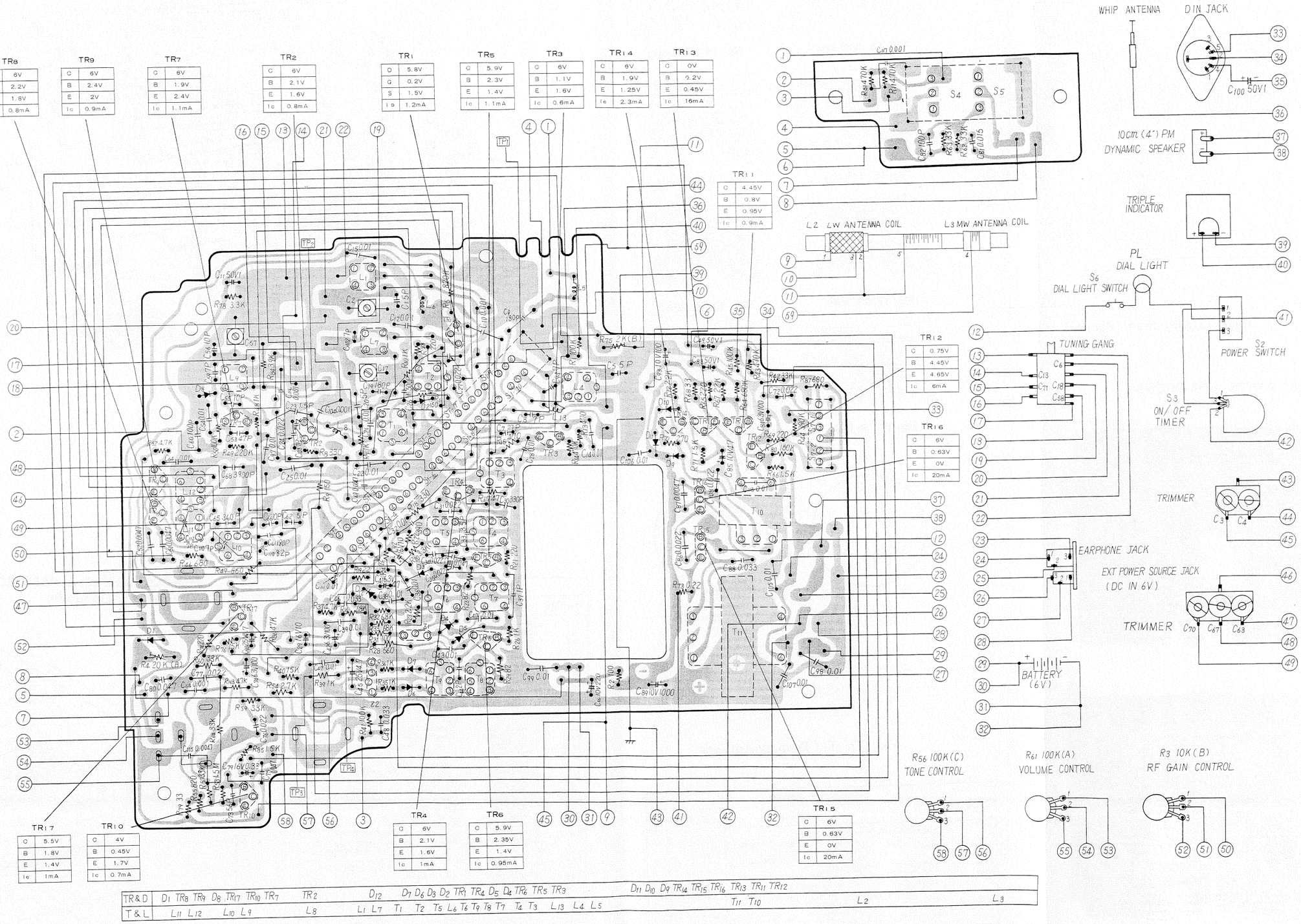
# Schematic Diagram – Model RF-966LB


TR1 2SK49 FM-AM RF AMP
TR2 2SC1359 FM-AM MIX
D2 0A90 AM D. AGC
TR3 2SC1359 1st FM IF AMP
TR4 2SC1359 2nd FM IF & 1st AM IF AMP
TR5 2SC1359 3rd FM IF & 2nd AM IF AMP
D4 0A90 AM DET & AGC
TR6 2SC1359 4th FM IF AMP
D6,7 2-0A90 FM DET
WHIP ANT
D1 RVDKB265J2 AOC
TR7 2SC1359 FM LOCAL OSC
D8 1S2687AA AFC
TR8 2SC829 LW LOCAL OSC
TR9 2SC829 MW & SW LOCAL OSC
D3 0A90 FM RECT
D3 1S1211 SWITCHING
D12 RVDKB265J3 AOC
TR10 2SC900 PRE AMP
TR11 2SC945 1st AF AMP
TR12 2SB173 2nd AF AMP
TR14 2SC828 POWER AOC
TR15,16 2SC1568 POWER AMP
TR17 2SC828 METER AMP
METER
DIAL LIGHT PL
SP 8Ω 10cm (4")
EXT POWER (DC 6V)
DC 6V UM-2×4 BATTERY
TR13 2SB175 RIPPLE FILTER
D9,10 1S1211 POWER AOC
D11 RVDVD1212L POWER AOC
DIN JACK
PH/REC OUT
FET
BOTTOM VIEW
FM MW MB SW

**Notes:**

1. $S_{1-1}$~$S_{1-10}$: Band selector switch in "FM" position.
2. $S_2$: Power switch in "OFF" position.
3. $S_3$: Timer switch in "OFF" position.
4. $S_4$: FM AFC/MW DX-Local selector switch in "AFC ON/DX" position.
5. $S_5$: Loudness switch in "OFF" position.
6. $S_6$: Dial light switch in "OFF" position.
7. $S_{7-1}$~$_{7-2}$: Radio-Phono selector switch in "RADIO" position.
8. DC voltage measurements are taken with circuit tester 10KΩ/V from negative line.
   - $TR_1$.....Gain control high position
   - $TR_7$.....FM position • $TR_8$.....MW position
   - $TR_9$.....MB position
9. Battery current: No signal ..... 35mA
   Maximum output .....600mA

# Circuit Board Wiring View–Model RF-966LB



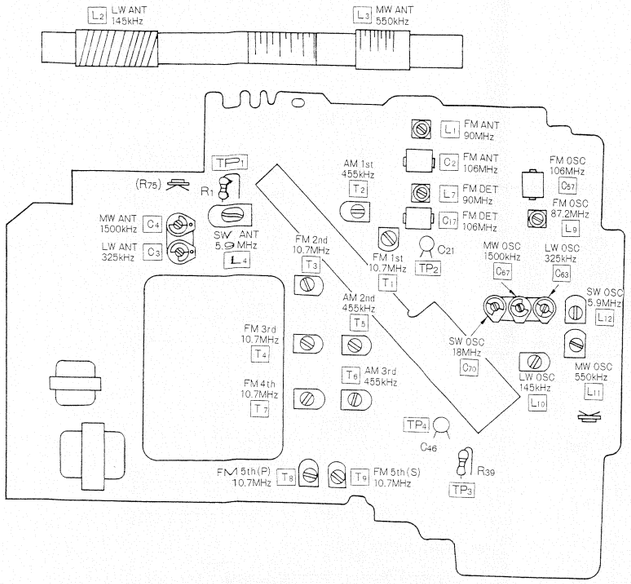
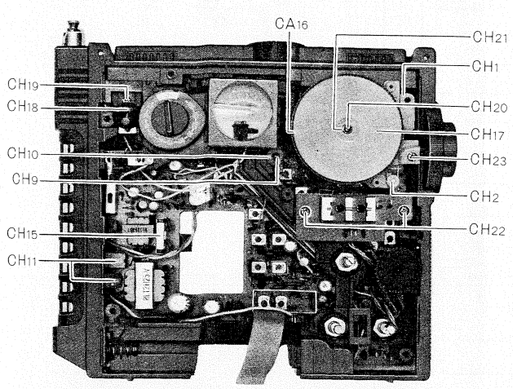
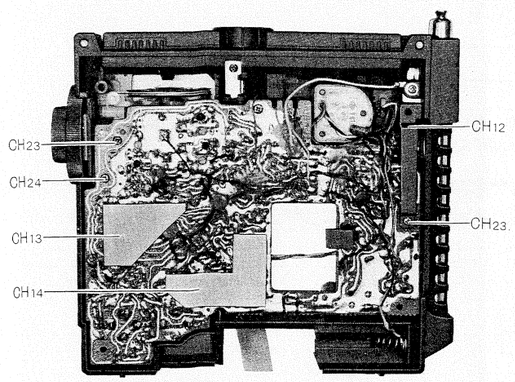



Fig. 12 Alignment Points

## ■ CHASSIS PARTS LOCATIONS



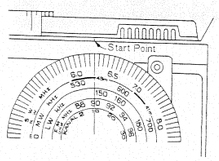




Fig. 13 550 kHz

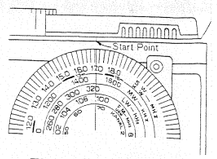



Fig. 14 1500 kHz

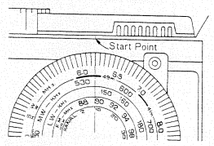



Fig. 15 145 kHz

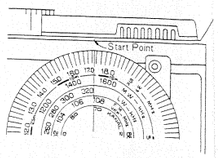



Fig. 16 325 kHz

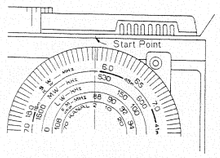



Fig. 17 5.9 MHz

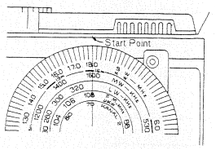



Fig. 18 18 MHz

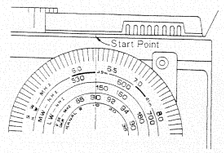



Fig. 19 90 MHz

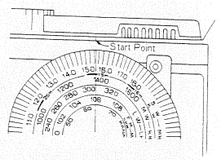



Fig. 20 106 MHz

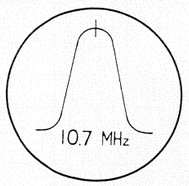



Fig. 21

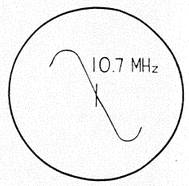



Fig. 22

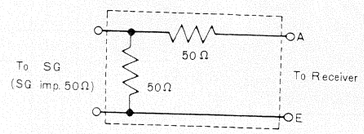


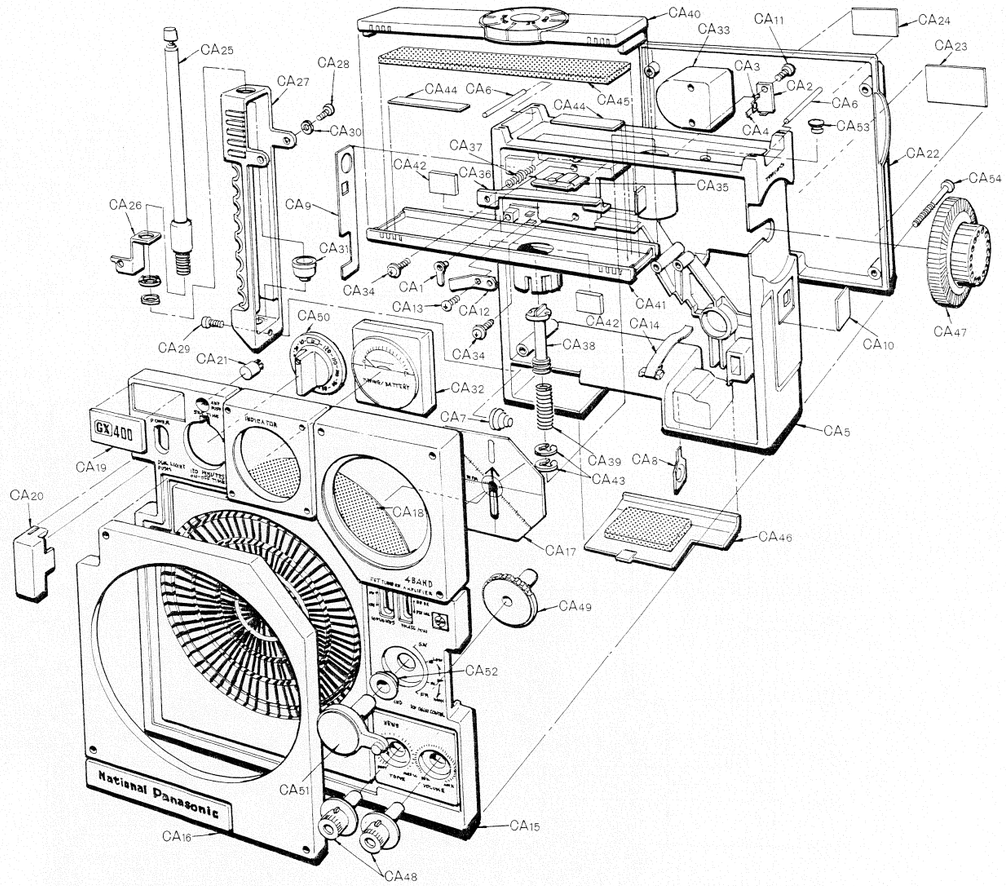

Fig. 23 FM Dummy Antenna

**ASSEMBLY PARTS**

| Ref.No. | Part No. | Description | Per Set (Pcs.) | Remarks |
|---|---|---|---|---|
| | RYDF966MBXG | Dial Drive Assembly | 1 | X ○ |
| CH1 | RUT10Y | Dial Drive Base (Parts of Assembly, Use RYDF966MBXG) | (1) | |
| CH2 | RDY31A | Shaft, Pulley | (4) | |
| CH3 | RDR21-1 | Pulley, Dial | (4) | |
| CH4 | RDT9061Z | Shaft, Tuning | 1 | Y ○ |
| CH5 | RDD9009Z | Drum, Dial(Small) | 1 | Y ○ |
| | XUC4FW-V | E. Ring, Drum(Small) M'tg | 1 | Z |
| | XUC8F5FY | E. Ring, Tuning Shaft M'tg | 1 | Z |
| CH6 | RDD452A | Drum, Dial(Large) | 1 | Y ○ |
| CH7 | RDZ05A | Cord, Dial(500m) | 1 Roll | Y |
| CH8 | RDS4090A | Spring, Dial | 1 | Y |



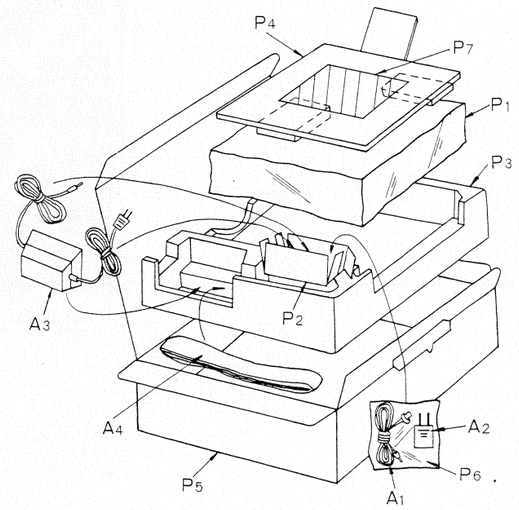
## ■ CABINET PARTS LOCATIONS




**ASSEMBLY PARTS**

| Ref.No. | Part No. | Description | Per Set (Pcs.) | Remarks |
|---|---|---|---|---|
| | RYMF966MBXG | Cabinet Body Assembly | 1 | X ○ |
| CA1 | RJT518Z | Terminal, Pilot Lamp (Parts of Assembly, Use RYMF966MBXG) | (1) | |
| CA2 | RUL309Z | Bracket, Stopper | (1) | |
| CA3 | RUL310Z | Washer, Stopper | (1) | |
| CA4 | RHR691Z | Stopper | (1) | |
| CA5 | RKM282Y | Cabinet Body Only | (1) | |
| CA6 | RKT71A | Bracket, Belt | (2) | |
| CA7 | RJC601 | Spring, Battery ⊖ Side | 2 | Y |
| CA8 | RJC206B | Terminal, Battery ⊕ Side | 2 | Y |
| CA9 | RGK519Z | Indicating Plate, Radio-Phono, EXT. Power Source (DC 6V) & Earphone Mark | 1 | Z ○ |
| CA10 | RGX614Z | Ornament, Cabinet Right | 1 | Z ○ |
| CA11 | XTN3+10B | Screw, Stopper Assembly M'tg | 1 | Z ○ |
| CA12 | RJT732-2 | Spring Terminal, Pilot Lamp | 1 | Z ○ |
| CA13 | XTN23+6B | Screw, Dial Light Terminal M'tg | 1 | Z ○ |
| CA14 | RHS17A | Tape, Battery Remove | 1 | Z ○ |
| | RYF1F966LBXG | Cabinet Front Cover Assembly | 1 | X ○ |
| CA15 | RKF196Y | Front Cover Only (Parts of Assembly, Use RYF1F966LBXG) | (1) | |
| CA16 | RKE115Y | Grille, Cabinet Front | (1) | |
| CA17 | RGP250Y | Panel, Dial | (1) | |
| CA18 | RGS32A | Baffle, Speaker | (1) | |
| CA19 | RGB211Z | Badge, GX400M Mark | 1 | Z ○ |
| CA20 | RBC63Z | Button, Dial Light | 1 | Y ○ |
| CA21 | RBC66A | Button, Gyro Antenna Case Pop-up | 1 | Y ○ |
| | RYF2F966LBXG | Cabinet Back Cover Assembly | 1 | X ○ |
| CA22 | RKF197Z | Back Cover Only (Parts of Assembly, Use RYF2F966LBXG) | (1) | |
| CA23 | RGT407X | Name Plate | 1 | Z ○ |
| CA24 | RGX615Z | Ornament, Cabinet Back | 1 | Z ○ |
| | RXEF877N | Stopper Assembly | 1 | Y ○ |
| CA2 | RUL309Z | Bracket, Stopper (Parts of Assembly, Use RXEF877N) | (1) | |
| CA3 | RUL310Z | Washer, Stopper | (1) | |
| CA4 | RHR691Z | Stopper | (1) | |

## ■ ACCESSORIES & PACKING PARTS LOCATIONS



## ■ REPLACEMENT PARTS LIST

**NOTES:** 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. X—Z rank: **X** rank parts will cover 80% of repair needs. **X+Y** rank parts will cover 95% of repair needs. **Z** rank parts are less necessary.
3. ❹ mark indicated 18 serrations parts.

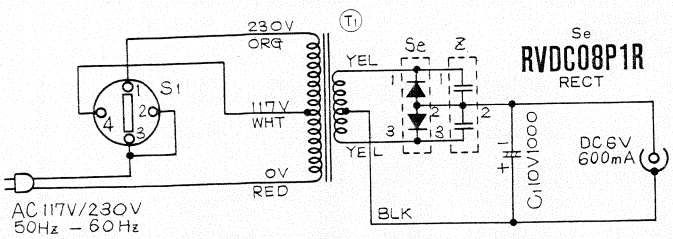
| Ref.No. | Part No. | Description | Per Set (Pcs.) | Remarks |
|---|---|---|---|---|
| **TRANSISTORS AND DIODES** | | | | |
| TR1 | 2SK49 | FM & AM RF Amplifier | 1 | X |
| TR2,3,4,5,6,7 | 2SC1359 | FM & AM Mixer, AM & FM IF Amplifier, FM Local Oscillator | 6 | X |
| TR8,9 | 2SC829 | LW Local Oscillator, MW & SW Local Oscillator | 2 | X |
| TR10 | 2SC900 | Pre Amplifier | 1 | X |
| TR11 | 2SC945 | 1st AF Amplifier | 1 | X |
| TR12 | 2SB173 | 2nd AF Amplifier | 1 | X |
| TR13 | 2SB175 | Ripple Filter | 1 | X |
| TR14,17 | 2SC828 | Power Operation Compensator, Meter Amplifier | 2 | X |
| TR15,16 | 2SC1568 | Power Amplifier | 2 | X ○ |
| D1 | RVDKB265J2 | Operation Compensator | 1 | X |
| D2,4,5 | 0A90 | AM D.AGC,AM Detector & AGC,FM Rectifier | 3 | X |
| D3,9,10 | 1S1211 | Switching, Power Operation Compensator | 3 | X |
| D6,7 | 2-0A90 | FM Detector | 1 pair | X |
| D8 | 1S2687AA | AFC | 1 | X |
| D11 | RVDVD1212L | Power Operation Compensator | 1 | X |
| D12 | RVDKB265J3 | Operation Compensator | 1 | X |
| **COILS AND TRANSFORMERS** | | | | |
| L1 | RLA4N10-0 | FM Antenna Coil | 1 | X ○ |
| L2,3 | RLF6X3-0 | LW & MW Antenna Coil | 1 | X ○ |
| L4 | RLA3M10 | SW Antenna Coil | 1 | X ○ |
| L5 | RLQY10G5 | Choke Coil | 1 | Y |
| L6 | RLQY75S5 | Choke Coil | 1 | Y |
| L7 | RLD4N45-0 | FM Detector Coil | 1 | X ○ |
| L8 | RLQZ10G1-Y | Choke Coil | 1 | Y ○ |
| L9 | RLO4N73-0 | FM Oscillator Coil | 1 | X ○ |
| L10 | RLO1M1 | LW Oscillator Coil | 1 | X ○ |
| L11 | RLO2M4 | MW Oscillator Coil | 1 | X |
| L12 | RLO3M14 | SW Oscillator Coil | 1 | X ○ |
| L13 | RLQY50S5 | Choke Coil | 1 | Y |
| T1,3,4 | RLI4M301 | 1st,2nd,3rd FM IF Transformer | 3 | X |
| T2 | RLI2M203 | 1st AM IF Transformer | 1 | X ○ |
| T5 | RLI2M204 | 2nd AM IF Transformer | 1 | X ○ |
| T6 | RLI2M402 | 3rd AM IF Transformer | 1 | X |
| T7 | RLI4M302 | 4th FM IF Transformer | 1 | X ○ |
| T8 | RLI4M501 | 5th FM IF Transformer, Primary | 1 | X |
| T9 | RLI4M502 | 5th FM IF Transformer, Secondary | 1 | X |
| T10 | RLT3F30-V | Input Transformer, P=700Ω: S=1KΩ | 1 | X |
| T11 | RLT2H25-V | Output Transformer, P=25Ω: S=8Ω | 1 | X ○ |
| **VARIABLE RESISTORS** | | | | |
| R3 | EVH89AF35B14 | 10KΩ(B), RF Gain Control | 1 | X ○ |
| R56 | EVH1GA003B15 | 100KΩ(C), Tone Control | 1 | X ○ |
| R61 | EVH2GA003A15 | 100KΩ(A), Volume Control | 1 | X ○ |
| R75 | EVLT4AA00B23 | 2KΩ(B), Meter Control | 1 | X |
| R4 | EVLT4AA00B24 | 20KΩ(B), RF Gain Current Control | 1 | X |
| **VARIABLE CAPACITORS** | | | | |
| C6,13,18,58,71 | RCVCY51C138 | Tuning Gang | 1 | X ○ |
| C2,17,57 | RCVCTY13B19 | Trimmer, FM Antenna & Oscillator | 3 | X ○ |
| C3,4 | RCV2T-16M | Trimmer, LW & MW Antenna | 1 | X |
| C63,67,70 | RCV3T-16M | Trimmer, SW, MW & LW Oscillator | 1 | X |
| **COMPONENT COMBINATIONS** | | | | |
| Z1 | EXAF203Z471R | 0.01μF×2, 470Ω | 1 | X |
| Z2 | EXA5DL04C | 330PF×3, 4.7KΩ×2 | 1 | X |
| **SPEAKER** | | | | |
| SP | EAS10P31SG | 10cm(4") PM Dynamic Speaker, Imp.8Ω | 1 | X ○ |
| **SWITCHES** | | | | |
| S1-1~S1-10 | RSR84ZK-A | Band Selector Switch | 1 | ❹ X ○ |
| S2 | RST33ZS-H | Power Switch | 1 | X ○ |
| S3 | RSE40YK-T | Timer, ON/OFF | 1 | ❹ X |
| S4,5 | RST36A-P | Loudness & AFC Switch | 1 | X ○ |
| S7-1,S7-2 | RSS3A | Radio-Phono Selector Switch | 1 | X |
| **RESISTORS** | | | | |
| R73 | ERM12VKR22 | 0.22Ω, ½Watt, ±10%, Wire | 1 | Z |
| R19 | ERD18VJ220 | 22Ω, ⅛Watt, ±5%, Carbon | 1 | Z |
| R68,79 | ERD18VJ330 | 33Ω, ⅛Watt, ±5%, Carbon | 2 | Z |
| R17 | ERD18VJ470 | 47Ω, ⅛Watt, ±5%, Carbon | 1 | Z |
| R23,29 | ERD18VJ820 | 82Ω, ⅛Watt, ±5%, Carbon | 2 | Z |
| R2,31 | ERD18VJ101 | 100Ω, ⅛Watt, ±5%, Carbon | 2 | Z |
| R21,65,69,74,88 | ERD18VJ221 | 220Ω, ⅛Watt, ±5%, Carbon | 5 | Z |
| R70 | ERD18VJ271 | 270Ω, ⅛Watt, ±5%, Carbon | 1 | Z |
| R8,18 | ERD18VJ331 | 330Ω, ⅛Watt, ±5%, Carbon | 2 | Z |
| R13,15 | ERD18VJ471 | 470Ω, ⅛Watt, ±5%, Carbon | 2 | Z |
| R28,47 | ERD18VJ561 | 560Ω, ⅛Watt, ±5%, Carbon | 2 | Z |
| R46,87 | ERD18VJ681 | 680Ω, ⅛Watt, ±5%, Carbon | 2 | Z |
| R55 | ERD18VJ821 | 820Ω, ⅛Watt, ±5%, Carbon | 1 | Z |
| R22 | ERD18VJ391 | 390Ω, ⅛Watt, ±5%, Carbon | 1 | Z |
| R7,26,35,36,39,48 | ERD18VJ102 | 1KΩ, ⅛Watt, ±5%, Carbon | 6 | Z |
| R66,71,85 | ERD18VJ152 | 1.5KΩ, ⅛Watt, ±5%, Carbon | 3 | Z |
| R24,27,72 | ERD18VJ222 | 2.2KΩ, ⅛Watt, ±5%, Carbon | 3 | Z |
| R20,78 | ERD18VJ332 | 3.3KΩ, ⅛Watt, ±5%, Carbon | 2 | Z |
| R37,52 | ERD18VJ472 | 4.7KΩ, ⅛Watt, ±5%, Carbon | 2 | Z |
| R16,32 | ERD18VJ682 | 6.8KΩ, ⅛Watt, ±5%, Carbon | 2 | Z |
| R54 | ERD18VJ272 | 2.7KΩ, ⅛Watt, ±5%, Carbon | 1 | Z |
| R40,76 | ERD18VJ153 | 15KΩ, ⅛Watt, ±5%, Carbon | 2 | Z |
| R67 | ERD18VJ223 | 22KΩ, ⅛Watt, ±5%, Carbon | 1 | Z |
| R42,62,63,59,60,57 | ERD18VJ333 | 33KΩ, ⅛Watt, ±5%, Carbon | 6 | Z |
| R33 | ERD18VJ683 | 68KΩ, ⅛Watt, ±5%, Carbon | 1 | Z |
| R86,113 | ERD18VJ473 | 47KΩ, ⅛Watt, ±5%, Carbon | 2 | Z |
| R1,41,45,50 | ERD18VJ104 | 100KΩ, ⅛Watt, ±5%, Carbon | 4 | Z |
| R49 | ERD18VJ224 | 220KΩ, ⅛Watt, ±5%, Carbon | 1 | Z |
| R44 | ERD18VJ394 | 390KΩ, ⅛Watt, ±5%, Carbon | 1 | Z |
| R11,14,43,51 | ERD18VJ474 | 470KΩ, ⅛Watt, ±5%, Carbon | 4 | Z |
| R64 | ERD18VJ684 | 680KΩ, ⅛Watt, ±5%, Carbon | 1 | Z |
| R53 | ERD18VJ155 | 1.5MΩ, ⅛Watt, ±5%, Carbon | 1 | Z |
| R6,9 | ERD18TJ151 | 150Ω, ⅛Watt, ±5%, Carbon | 2 | Z |
| R10 | ERD18TJ102 | 1KΩ, ⅛Watt, ±5%, Carbon | 1 | Z |
| R84 | ERD18TJ392 | 3.9KΩ, ⅛Watt, ±5%, Carbon | 1 | Z |
| R5 | ERD18TJ824 | 820KΩ, ⅛Watt, ±5%, Carbon | 1 | Z |
| R80 | ERD18VJ154 | 150KΩ, ⅛Watt, ±5%, Carbon | 1 | Z |
| R114 | ERD18TJ333 | 33KΩ, ⅛Watt, ±5%, Carbon | 1 | Z |
| **CAPACITORS** | | | | |
| C37 | ECCD1H010C | 1PF, 50WV, ±0.25PF, Ceramic | 1 | Z |
| C23 | ECCD1H1R5C | 1.5PF, 50WV, ±0.25PF, Ceramic | 1 | Z |
| C44 | ECCD1H020C | 2PF, 50WV, ±0.25PF, Ceramic | 1 | Z |
| C33 | ECCD1H3R5C | 3.5PF, 50WV, ±0.25PF, Ceramic | 1 | Z |
| C1,5,20,62 | ECCD1H050CC | 5PF, 50WV, ±0.25PF, Ceramic | 4 | Z |
| C8,59,94,112,102,103, | ECCD1H070DC | 7PF, 50WV, ±0.5PF, Ceramic | 6 | Z |
| C55,56,66 | ECCD1H100KC | 10PF, 50WV, ±10%, Ceramic | 3 | Z |
| C7 | ECCD1H270KC | 27PF, 50WV, ±10%, Ceramic | 1 | Z |
| C53 | ECCD1H470KC | 47PF, 50WV, ±10%, Ceramic | 1 | Z |
| C73 | ECCD1H560K | 56PF, 50WV, ±10%, Ceramic | 1 | Z |
| C82 | ECCD1H101K | 100PF, 50WV, ±10%, Ceramic | 1 | Z |
| C9,19 | ECCD1H181K | 180PF, 50WV, ±10%, Ceramic | 2 | Z |
| C10 | ECKD1H102PF | 0.001μF, 50WV, $\pm^{100}_{0}$%, Ceramic | 1 | Z |
| C14,21,28,36,43 | ECKE1H103PF | 0.01μF, 50WV, $\pm^{100}_{0}$%, Ceramic | 5 | Z |
| C27,31 | ECKE1H223PF | 0.022μF, 50WV, $\pm^{100}_{0}$%, Ceramic | 2 | Z |
| C60 | ECKE1H333PF | 0.033μF, 50WV, $\pm^{100}_{0}$%, Ceramic | 1 | Z |
| C86,77 | ECKE1H222MD | 0.0022μF, 50WV, ±20%, Ceramic | 2 | Z |
| C104,30,114,116,117 | ECKE1H102MD | 0.001μF, 50WV, ±20%, Ceramic | 5 | Z |
| C52,87,69 | ECKE1H472MD | 0.0047μF, 50WV, ±20%, Ceramic | 3 | Z |
| C12,15,22,25,32,38,39,40,47,54,64,97,98,99,105106,107,111,113 | ECKE1H103MD | 0.01μF, 50WV, ±20%, Ceramic | 19 | Z |
| C61 | ECMS05181J-H | 180PF, 125WV, ±5%, Styrol | 1 | Z |
| C26 | ECQS05152KZ | 1500PF, 50WV, ±10%, Styrol | 1 | Z |
| C68 | ECQS05392KZ | 3900PF, 50WV, ±10%, Styrol | 1 | Z |
| C72,76,35,108,34 | ECQG05223MZ | 0.022μF, 50WV, ±20%, Polyester | 5 | Z |
| C46,48,88,51 | ECQG05333MZ | 0.033μF, 50WV, ±20%, Polyester | 4 | Z |
| C80,75,24,101 | ECQG05473MZ | 0.047μF, 50WV, ±20%, Polyester | 4 | Z |
| C79 | ECAG16ER33 | 0.33μF, 16WV, Electrolytic | 1 | Y |
| C41 | ECEA6V47 | 47μF, 6.3WV, Electrolytic | 1 | Y |
| C74,84,42 | ECEA6V100 | 100μF, 6.3WV, Electrolytic | 3 | Y |
| C85 | ECEA10V47 | 47μF, 10WV, Electrolytic | 1 | Y |
| C16 | ECEA10V220 | 220μF, 10WV, Electrolytic | 1 | Y |
| C89 | ECEA10V1000 | 1000μF, 10WV, Electrolytic | 1 | Y |
| C29,92 | ECEA16V10 | 10μF, 16WV, Electrolytic | 2 | Y |
| C45,90 | ECEA25V4R7 | 4.7μF, 25WV, Electrolytic | 2 | Y |
| C11,49,83,100 | ECEA50V1 | 1μF, 50WV, Electrolytic | 4 | Y |
| C81 | ECQG05153MZ | 0.015μF, 50WV, ±10%, Polyester | 1 | Z |
| C93 | ECEA10V100 | 100μF, 10WV, Electrolytic | 1 | Y |
| C110 | ECMS05820K-H | | 1 | |
| C65 | ECQS1361JZ | 360PF, 125WV, ±5%, Styrol | 1 | Z |
| C115 | ECQG05472MZ | 0.0047μF, 50WV, ±20%, Polyester | 1 | Z |
| **CABINET** | | | | |
| | RYMF966MBXG | Cabinet Body Assembly | 1 | X ○ |
| CA7 | RJC601 | Spring, Battery ⊖ Side | 2 | Y |
| CA8 | RJC206B | Terminal, Battery ⊕ Side | 2 | Y |
| CA9 | RGK519Z | Indicating Plate; Radio-Phono, EXT. Power Source,(DC 6V) & Earphone Mark | 1 | Z ○ |
| CA10 | RGX614Z | Ornament, Cabinet Right | 1 | Z ○ |
| CA11 | XTN3+10B | Screw, Stopper Assembly M'tg | 1 | Z |
| CA12 | RJT732-2 | Spring Terminal, Pilot Lamp | 1 | Z ○ |
| CA13 | XTN23+6B | Screw, Dial Light Terminal M'tg | 1 | Z |
| CA14 | RHS17A | Tape, Battery Remove | 1 | Z ○ |
| | RYF1F966MBXG | Cabinet Front Cover Assembly | 1 | X ○ |
| CA19 | RGB212Z | Badge, GX400 Mark | 1 | Z ○ |
| CA20 | RBC63Z | Button, Dial Light | 1 | Y ○ |
| CA21 | RBC66A | Button, Gryo Antenna Case Pop-up | 1 | Y ○ |
| | RYF2F966MBXG | Cabinet Back Cover Assembly | 1 | X ○ |
| CA23 | RGT407X | Name Plate | 1 | Z ○ |
| CA24 | RGX615Z | Ornament, Cabinet Back | 1 | Z ○ |
| | RXEF877N | Stopper Assembly | 1 | X ○ |
| CA25 | XEART196FBY | Whip Antenna | 1 | X ○ |
| CA26 | RMA110A | Bracket, Whip Antenna | 1 | Z ○ |
| CA27 | RKE116A | Case, Whip Antenna | 1 | Y ○ |
| CA28 | XTN3+12B | Screw, Whip Antenna M'tg | 1 | Z |
| CA29 | XTN3+10BFZ | Screw, Whip Antenna Case M'tg | 1 | Z |
| CA30 | XWG3 | Washer, Whip Antenna M'tg | 1 | Z |

| Ref.No. | Part No. | Description | Per Set (Pcs.) | Remarks |
|---|---|---|---|---|
| :A31 | RHG968A | Rubber, Whip Antenna | 1 | Z ○ |
| :A32 | RSM2605B-W | Meter, Triple Indicator | 1 | X ○ |
| :A33 | RSE40YK-T | Timer, ON/OFF | 1 | ❂ X |
| :A34 | XTW3+8E | Screw, Timer M'tg | 2 | Z |
| :A35 | RUB77A | Bracket, Antenna Drive Lever | 1 | Y ○ |
| :A36 | RUB79A | Lever, Antenna Drive | 1 | Y ○ |
| :A37 | RDS9230A | Spring, Antenna Drive | 1 | Y ○ |
| :A38 | RUB88Z | Shaft, Gyro Antenna Case | 1 | Z ○ |
| :A39 | RDS5390A | Spring, Gyro Antenna Case | 1 | Y |
| :A40 | RKE117Z | Cover, Gyro Antenna Case | 1 | Y ○ |
| :A41 | RKE118Z | Case, Core Antenna | 1 | Y ○ |
| :A42 | RHR731Z | Cushion, Core Antenna | 2 | Z |
| :A43 | XUC8FW | E Ring, Gyro Antenna Case & Shaft M'tg | 2 | Z ○ |
| :A44 | RHG685Z | Rubber, Core Antenna | 2 | Z ○ |
| :A45 | RHR649Z | Cushion, Core Antenna | 1 | Z ○ |
| :A46 | RKK79A | Battery Cover | 1 | X ○ |
| :A47 | RBN239A | Knob, Tuning | 1 | X ○ |
| :A48 | RBN240A | Knob, Tone & Volume | 2 | X ○ |
| :A49 | RBN241A | Knob, RF Gain Control | 1 | X ○ |
| :A50 | RBN242AK | Knob, Timer | 1 | ❂ X ○ |
| :A51 | RBS71AK | Knob, Band Selector | 1 | ❂ X ○ |
| :A52 | RHR110-1 | Spacer, Band Selector Knob | 1 | Z ○ |
| :A53 | RHG975Z | Rubber, Cabinet Upper Side | 1 | Z ○ |
| :A54 | XTB3+60BFN | Screw, Cabinet Cover M'tg | 4 | Z |
| | | **CHASSIS** | | |
| | RYDF966MBXG | Dial Drive Assembly | 1 | X ○ |
| :H4 | RDT9061Z | Shaft, Tuning | 1 | Y ○ |
| :H5 | RDD9009Y | Drum, Dial(Small) | 1 | Y ○ |
| | XUC4FW-V | E Ring, Drum(Small) M'tg | 1 | Z |
| | XUCR5FY | E Ring, Tuning Shaft M'tg | 1 | Z |
| :H6 | RDD452A | Drum, Dial(Large) | 1 | Y ○ |
| :H7 | RDZ05A | Cord, Dial (500m) | 1 Roll | Y |
| :H8 | RDS4090A | Spring, Dial | 1 | Y |
| :H9(PL) | XAMR96T150 | Pilot Lamp, Indicator & Dial Light | 1 | X ○ |
| :H10 | RHG211 | Rubber, Pilot Lamp | 1 | Z |
| :H11 | RJJ85A-C | Jack, EXT. Power Source (DC 6V) & Earphone | 1 | Y ○ |
| | RJS17A-X | Connecting Socket, Speaker | 2 | Z |
| | RUV283 | Cover, Radio-Phono Selector Switch | 1 | Z |
| | RJS75Z-H | Din Jack, Phono & Rec. Out | 1 | Y |

| Ref.No. | Part No. | Description | Per Set (Pcs.) | Remarks |
|---|---|---|---|---|
| :H12 | RMK70Z | Bracket, Din Jack | 1 | Z ○ |
| :H13 | RMC225A | Shield Cover, P.C. Board | 1 | Z ○ |
| :H14 | RMC318Z | Shield Cover, P.C. Board | 1 | Z ○ |
| :H15 | RMY75Z | Heat Sink, Transistors (TR15,16) | 1 | Z |
| :H16 | RDH88Z | Dial Back Plate | 1 | Z ○ |
| :H17 | RKD272X | Scale, Dial | 1 | Y ○ |
| :H18 | RHG703A | Rubber Cover, Power Switch | 1 | Z |
| :H19 | XYN3+C8S | Screw, Power Switch M'tg | 1 | Z |
| :H20 | XTN26+8BFZ | Screw, Scale M'tg | 1 | Z ○ |
| :H21 | XWG23X6FZ | Washer, Scale M'tg | 1 | Z ○ |
| | RMC244Z | Earth Terminal, Speaker | 1 | Z ○ |
| :H22 | XTW3+10E | Screw, Loudness & AFC Switch M'tg | 2 | Z |
| :H23 | XTN3+10B | Screw, Dial Drive Assembly & Din Jack Bracket M'tg | 3 | Z |
| :H24 | XTN3+12B | Screw, Dial Drive Assembly M'tg | 1 | Z |
| :H25 | XYN26+C6 | Screw, Drum (Large) M'tg | 1 | Z |
| | | **ACCESSORIES** | | |
| A1 | XEH1A1 | Magnetic Earphone | 1 | Y |
| A3 | RD-9480B | AC Adaptor SAFETY | 1 | Y ○ |
| A4 | RQC9010Z | Belt | 1 | Y ○ |
| | | **PACKING** | | |
| P1 | RPP117A | Polyethylene Cover | 1 | Z |
| P2 | RPE181Z | Cover, AC Adaptor | 1 | Z |
| P3 | RPN1783Z | Pad, Lower Side | 1 | Z ○ |
| P4 | RPN1787Z | Pad, Upper Side | 1 | Z ○ |
| P5 | RPK321Z | Gift Box | 1 | Y ○ |
| P6 | RPF9Z | Polyethylene Cover (Earphone & Plug) | 1 | Z |
| P7 | RQX5702Z | Instruction Book | 1 | Y ○ |

# AC ADAPTOR-MODEL RD-9480B

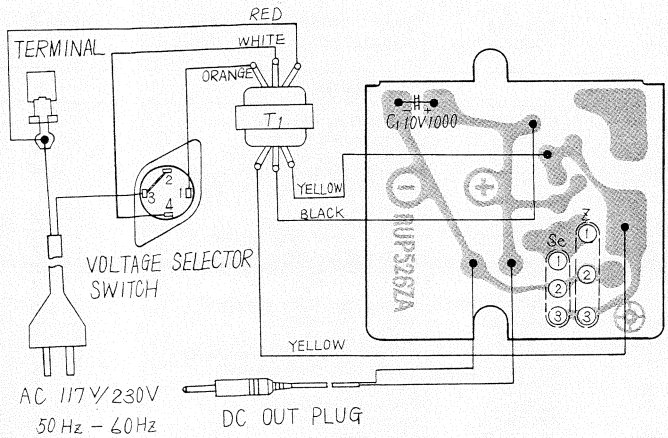
## ■ SCHEMATIC DIAGRAM




**Note:**

1. $S_1$: Voltage selector switch "230V" position.

## ■ CIRCUIT BOARD WIRING VIEW




## ■ REPLACEMENT PARTS LIST

| Ref.No. | Part No. | Description | Per Set (Pcs.) | Remarks |
|---|---|---|---|---|
| | | **RECTIFIER** | | |
| Se | RVDC08P1R | Rectifier SAFETY | 1 | X |
| | | **TRANSFORMER** | | |
| T1 | RLT5J151-W | Power Transformer SAFETY | 1 | X ○ |
| | | **COMPONENT COMBINATION** | | |
| Z | RXAF103P22HD | 0.01μF×2 | 1 | Y |
| | | **SWITCH** | | |
| S1 | RSR12A | Voltage Selector Switch SAFETY | 1 | X |
| | | **CAPACITOR** | | |
| C1 | ECEA10V1000 | 1000μF, 10WV, Electrolytic | 1 | Y |
| | | **CABINET** | | |
| | RKM333Z | Cabinet Body Only | 1 | X ○ |
| | RKF241Z | Cabinet Back Cover | 1 | X ○ |
| | RGT402Z | Name Plate | 1 | Y ○ |
| | XTB3+12BFN | Screw, Cabinet Back Cover M'tg | 2 | Z |
| | | **CHASSIS** | | |
| | RJA40Z-K | AC Cord, Power Source SAFETY | 1 | Y ○ |
| | RJP96Z | DC OUT Plug with Cord | 1 | Y ○ |
| | RJR18B | Lead Holder | 1 | Z |
| | RHR104B | Grommet (Rubber), AC Cord SAFETY | 1 | Z |
| | RHR550A | Grommet (Plastic), AC Cord SAFETY | 1 | Z |
| | XTN23+8B | Screw, Voltage Selector Switch M'tg | 1 | Z |

Note: SAFETY Indicated that only parts specified by the manufacturer be used for replacement in critical circuits.



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